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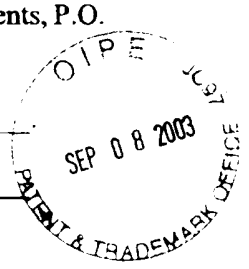
September 3, 2003

Amy Nguyen

Amy Nguyen, Legal Assistant



RESPONSE UNDER 37 CFR §1.111
Examining Group 1638
Patent Application
Docket No. CIB-T100XC1
Serial No. 09/685,403

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Examiner	:	David H. Kruse
Art Unit	:	1638
Applicants	:	Peter R. Beetham, Patricia L. Avissar, Keith A. Walker, Richard A. Metz
Serial No.	:	09/685,403
Filed	:	October 10, 2000
Confirm. No.	:	4644
For	:	Non-Transgenic Herbicide Resistant Plant

Drawing Review Branch
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

SUBMISSION OF FORMAL DRAWINGS

Sir:

Submitted herewith please find 14 sheets of formal drawings (Figs. 1-7). The Examiner is respectfully requested to acknowledge receipt of these formal drawings.

The submitted drawings are now all on the same size paper and are believed to obviate the informalities indicated on Form PTO-948 attached to the Office Action mailed June 3, 2003.

Respectfully submitted,

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JS/an
Attachments: 14 sheets of formal drawings

DNA sequence:

ccttcatgtcttttgtagaaaccccattatctttcttagggcccaattgaaaacccacattttctttcacctaaccca
ccaaagccttgcacatgttgacgtgaacaccaaactaacacgtgtcatactgccagtggttatgataaatgctcatacc
ataccagagtcatagagtttttggttggtgaaagatttgacggatgccttcttctcatttctcaccaactccctccaaa
cccaacaaaatgtttatattagcaaagccgccaaagtgtaaacgaaagtttataaatttcatttctgtgatcttacgta
attggaggaagatcaaaattttcaatccccattcttcgattgcttcaattgaagtttctccg

[transit peptide start]

ATGGCGCAAGTTAGCAGAATCTGCAATGGTGTGCAGAACCCATCTCTTATCTCCAATCTCTCGAAATCCAGTCAACGCA
AATCTCCCTTATCGGTTTCTCTGAAGACGCAGCAGCATCCACGAGCTTATCCGATTTCGTCGTCGTGGGGATTGAAGAA
GAGTGGGATGACGTTAATTGGCTCTGAGCTTCGTCCTCTTAAGGTCATGTCTTCTGTTTCCACGGCGGAG

[mature peptide starts]

AAAGCGTCGGAGATTGTACTTCAACCCATTAGAGAAATCTCCGGTCTTATTAAGCTTCCTGGCTCCAAGTCTCTATCAA
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AATGCGT**CCA**CTTACCGCTGCGGTCACTGCTGCAGGTGGAAACGCAAGGTAGATTGAAGGAGTTGATGCTTCTTGGTAT
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GTAATCTCGTTCCTTACTCTATGAACACTTGCAGAAATGTGTGTTCATCATAGCCTTAGCTTGACAAGATTTCAGTTTT
TAATCTACTCTCAACGGATGGATCCTAAAATAGAATCGGATTTGGTGATTGGTTTTCGTTCTCGATTACCGTTTTCGTT
GTATGATTTCTTGATTAACAATTAGGAGACATGTTATGCATTTGCAGGTGAAGCTTTCTGGATCAATTAGTAGTCAGTA
CTTGACTGCTCTGCTCATGTCTGCTCCCTTAGCTCTTGGAGACGTCGAGATTGAGATTGTCGATAAATTAATTTCTGTT
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ACTGAATCATCGACGAGGCTGTTAAGTTTATAGTGAAATTCGTCTAGGTCAAAGTTTCATCTTTTGACAAGTTGTATAT
AACATATTCGCAAGATTCTAAGCTCAATTTTTGTGATGAATCTCTAGGGAGATGTAAAATTCGCCGAGGTCCTTGAGAA
AATGGGATGTAAAGTGTCCTGGACAGAGAACAGTGTGACTGTGACAGGACCACCTAGAGATGCTTTTGGAATGAGACAC
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ATTGATACATATGATGATCATAGAATGGCAATGGCATTCTCTCTTGCAGCTTGTGCTGATGTTCCAATCACCATCAACG
ACTCTGGTTGCACCAGGAAAACCTTCCCCGACTACTTCCAAGTACTTGAAAGAATCACAAAGCAC**TAA**acaataaactc
tgtttttttcttctgatccaagctt

FIG. 1A

Protein sequence:

MAQVSRICNGVQNPSLISNLSKSSQRKSPLSVSLKTQQHPRAYPISSSWGLKKSGMTLIGSELRPLKVMSSVSTAE
KASEIVLQPIREISGLIKLPGSKSLSNRILLLAALSEGTTVVDNLLNSDDINYMLDALKRLGLNVETDSENNRAVV
EGCGGIFPASIDSKSDIELYLGNAGTAMRPLTAAVTAAGGNASYVLDGVPRMRERPIGDLVVGLKQLGADVECTLG
TNCPPVRVNANGGLPGGKVKLSGSISSQYLTALLMSAPLALGDVEIEIVDKLISVPYVEMTLKLMERFGVSVEHSD
SWDRFFVKGGQKYKSPGNAYVEGDASSACYFLAGAAITGETVTVEGCGTTSLQGDVKFAEVLEKMGCKVSWTENSV
TVTGPPRDAFGMRHLRAIDVNMNKMPDVAMTLAVVALFADGPTTIRDVASWRVKETERMIAICTELRKLGATVEEG
SDYCVITPPKKVKTAEIDTYDDHRMAMAFSLAACADVPITINDSGCTRKTFPDYFQVLERITKH

FIG. 1B

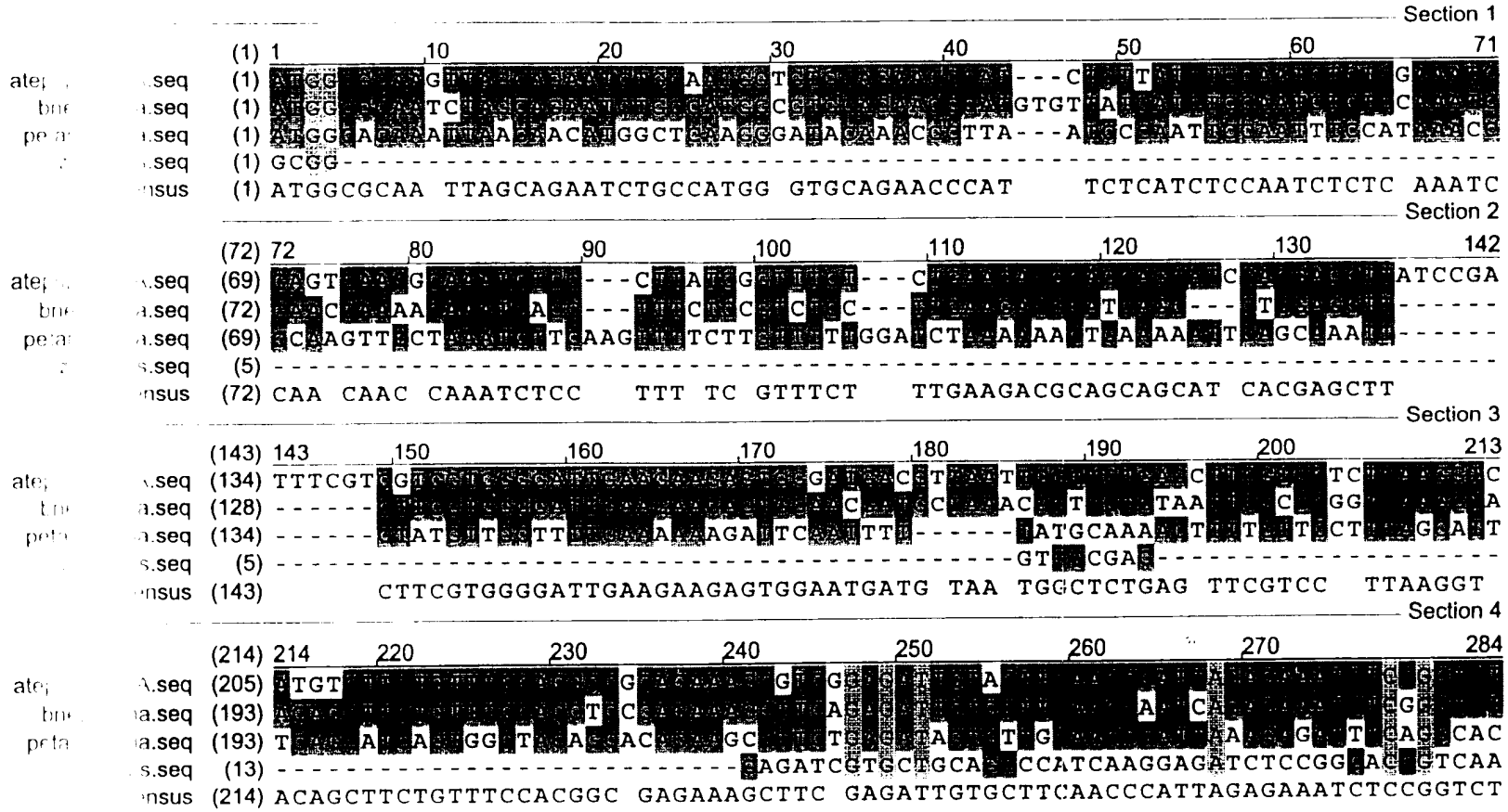
Arabidopsis thaliana wild type sequence:

Position	173	174	175	176	177	178	179	180	181	182	183
	L	*G*	*N*	*A*	*G*	*T*	*A*	*M*	*R*	*P*	*L*
	CTC	GGT	AAT	GCA	GGA	ACA	GCA	ATG	CGT	CCA	CTT

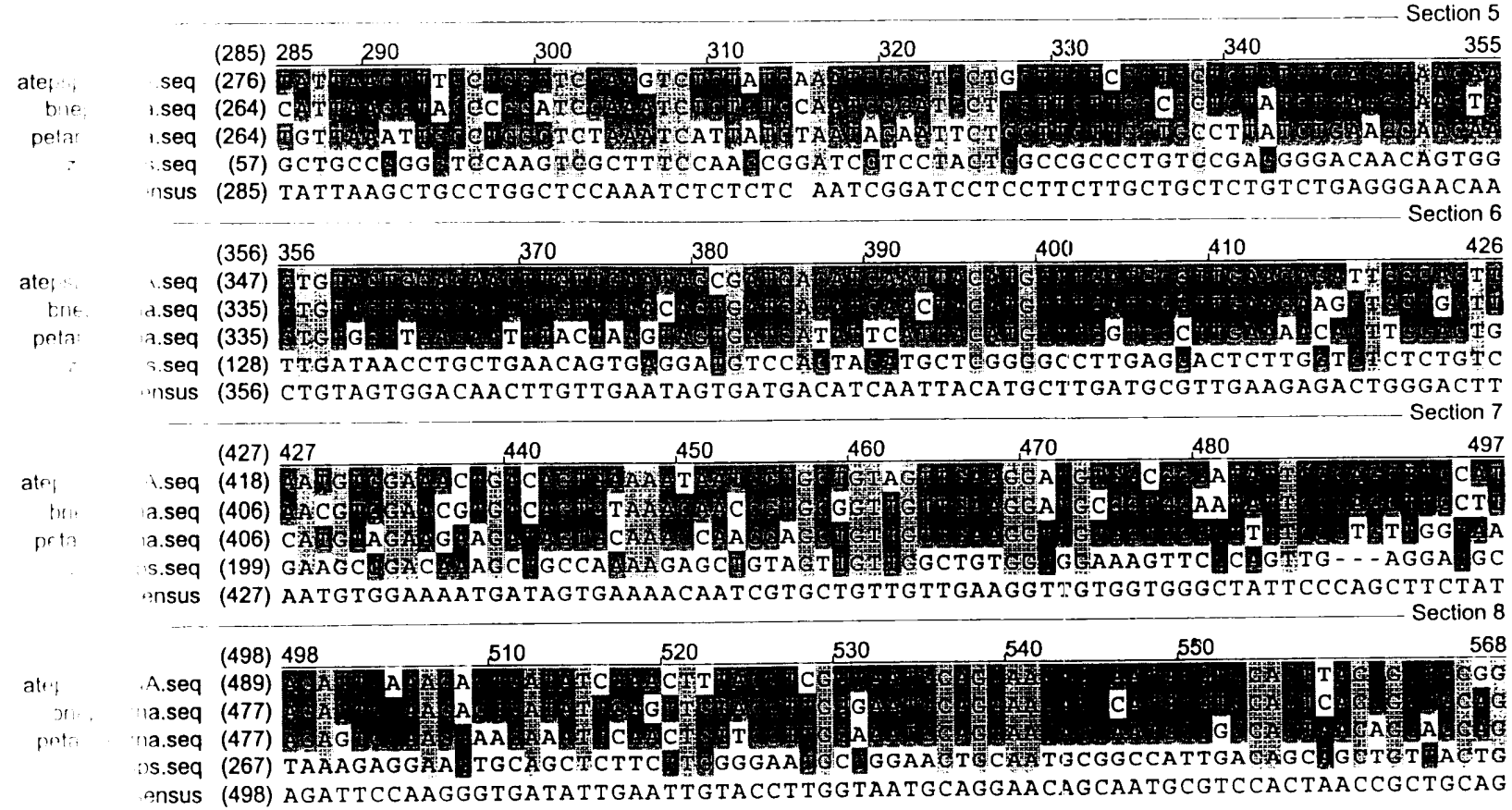
Arabidopsis thaliana mutant sequences:

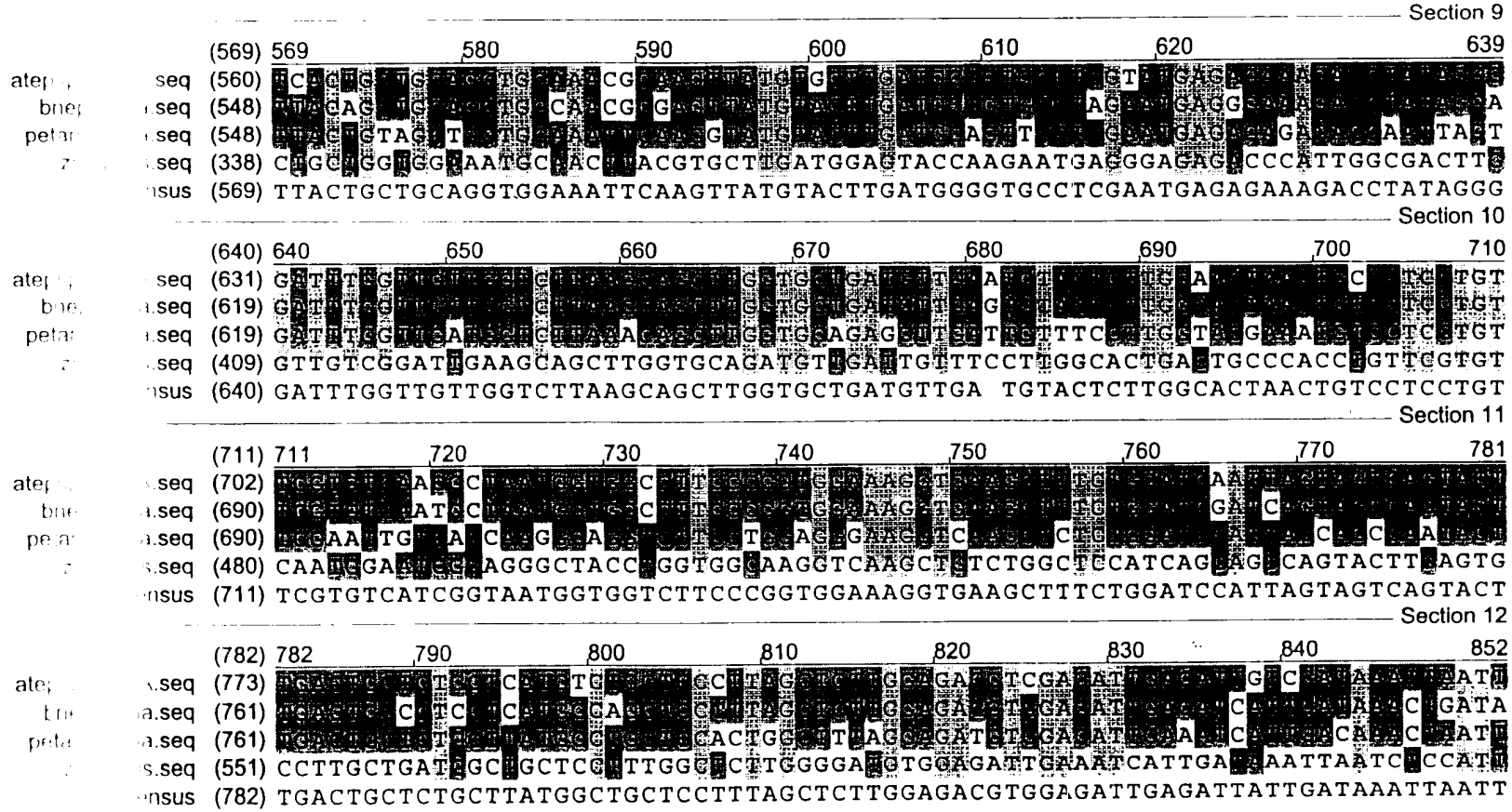
Name											
A_{177}	CTC	GGT	AAT	GCA	GCA	ACA	GCA	ATG	CGT	CCA	CTT
	L	*G*	*N*	*A*	*A*	*T*	*A*	*M*	*R*	*P*	*L*
I_{178}	CTC	GGT	AAT	GCA	GGA	ATA	GCA	ATG	CGT	CCA	CTT
	L	*G*	*N*	*A*	*I*	*T*	*A*	*M*	*R*	*P*	*L*
$A_{177}I_{178}$	CTC	GGT	AAT	GCA	GCA	ATA	GCA	ATG	CGT	CCA	CTT
	L	*G*	*N*	*A*	*A*	*I*	*A*	*M*	*R*	*P*	*L*
$I_{178}S_{182}$	CTC	GGT	AAT	GCA	GGA	ATA	GCA	ATG	CGT	TCA	CTT
	L	*G*	*N*	*A*	*G*	*I*	*A*	*M*	*R*	*S*	*L*
$A_{177}S_{182}$	CTC	GGT	AAT	GCA	GCA	ACA	GCA	ATG	CGT	TCA	CTT
	L	*G*	*N*	*A*	*A*	*T*	*A*	*M*	*R*	*S*	*L*
$A_{177}I_{178}S_{182}$	CTC	GGT	AAT	GCA	GCA	ATA	GCA	ATG	CGT	TCA	CTT
	L	*G*	*N*	*A*	*A*	*I*	*A*	*M*	*R*	*S*	*L*
$V_{178}S_{182}$	CTC	GGT	AAT	GCA	GGA	GTA	GCA	ATG	CGT	TCA	CTT
	L	*G*	*N*	*A*	*G*	*V*	*A*	*M*	*R*	*S*	*L*
$L_{178}S_{182}$	CTC	GGT	AAT	GCA	GGA	TTA	GCA	ATG	CGT	TCA	CTT
	L	*G*	*N*	*A*	*G*	*L*	*A*	*M*	*R*	*S*	*L*
$A_{177}V_{178}$	CTC	GGT	AAT	GCA	GCA	GTA	GCA	ATG	CGT	CCA	CTT
	L	*G*	*N*	*A*	*A*	*V*	*A*	*M*	*R*	*P*	*L*
$A_{177}L_{178}$	CTC	GGT	AAT	GCA	GCA	TTA	GCA	ATG	CGT	CCA	CTT
	L	*G*	*N*	*A*	*A*	*L*	*A*	*M*	*R*	*P*	*L*

FIG. 2

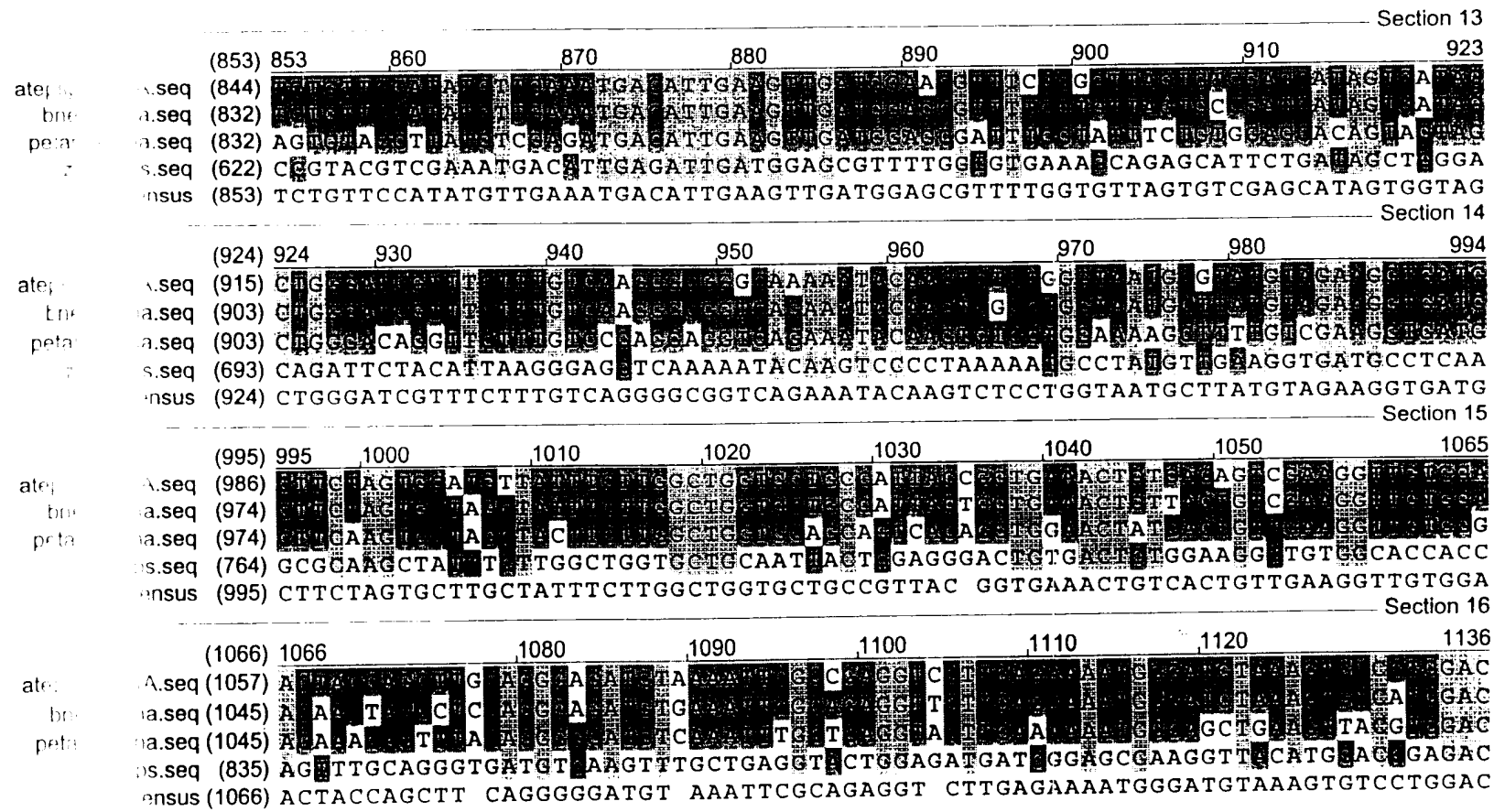


FIG

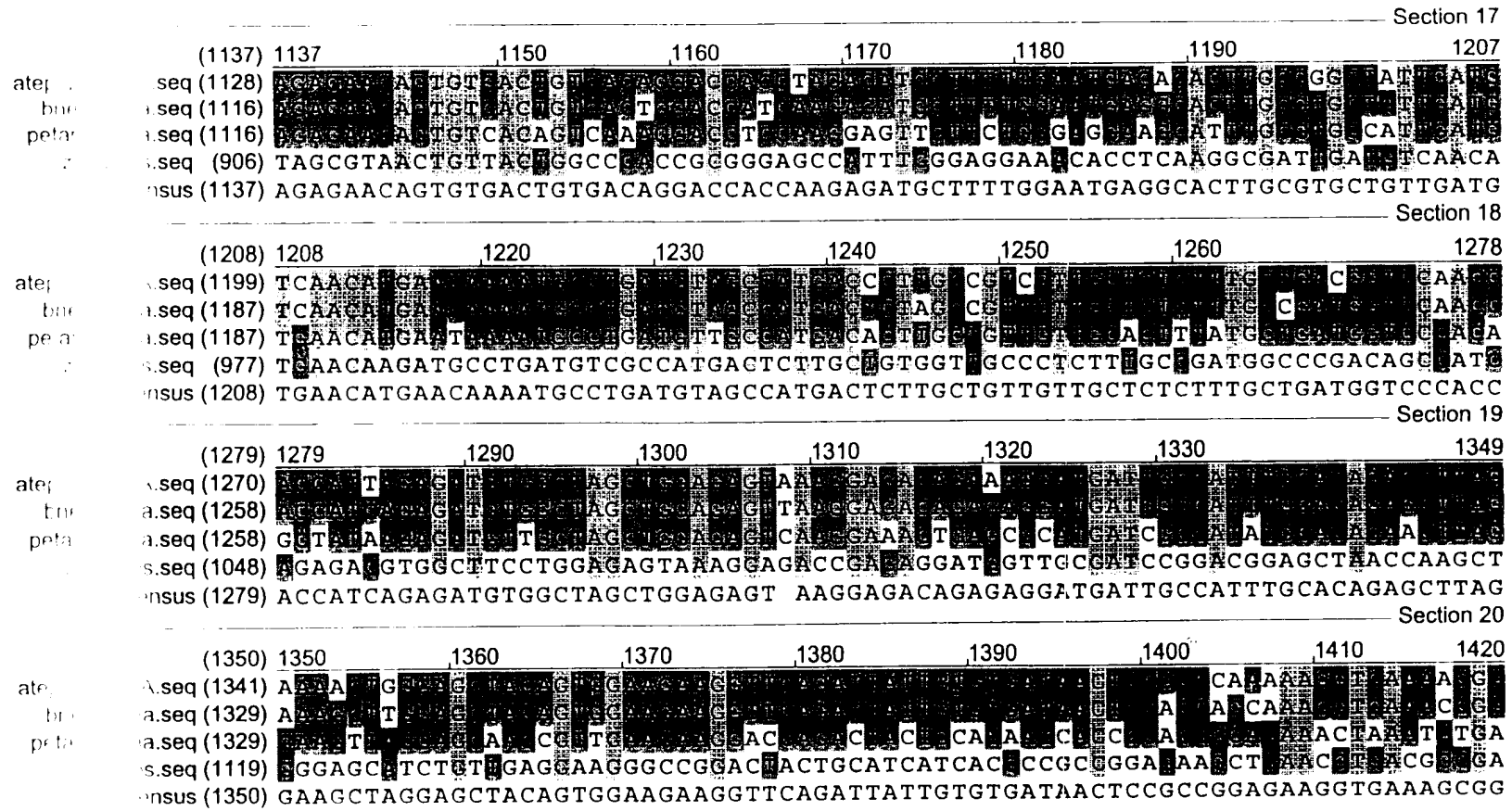




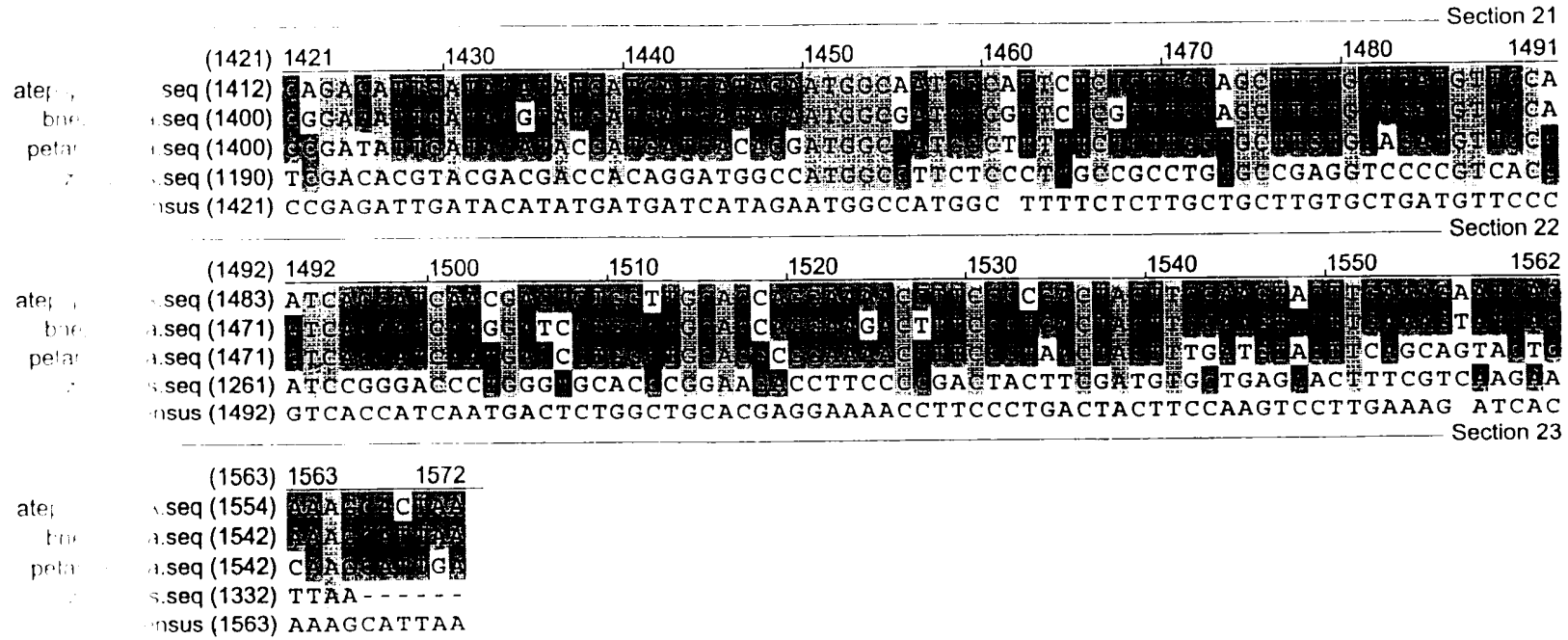
FIG



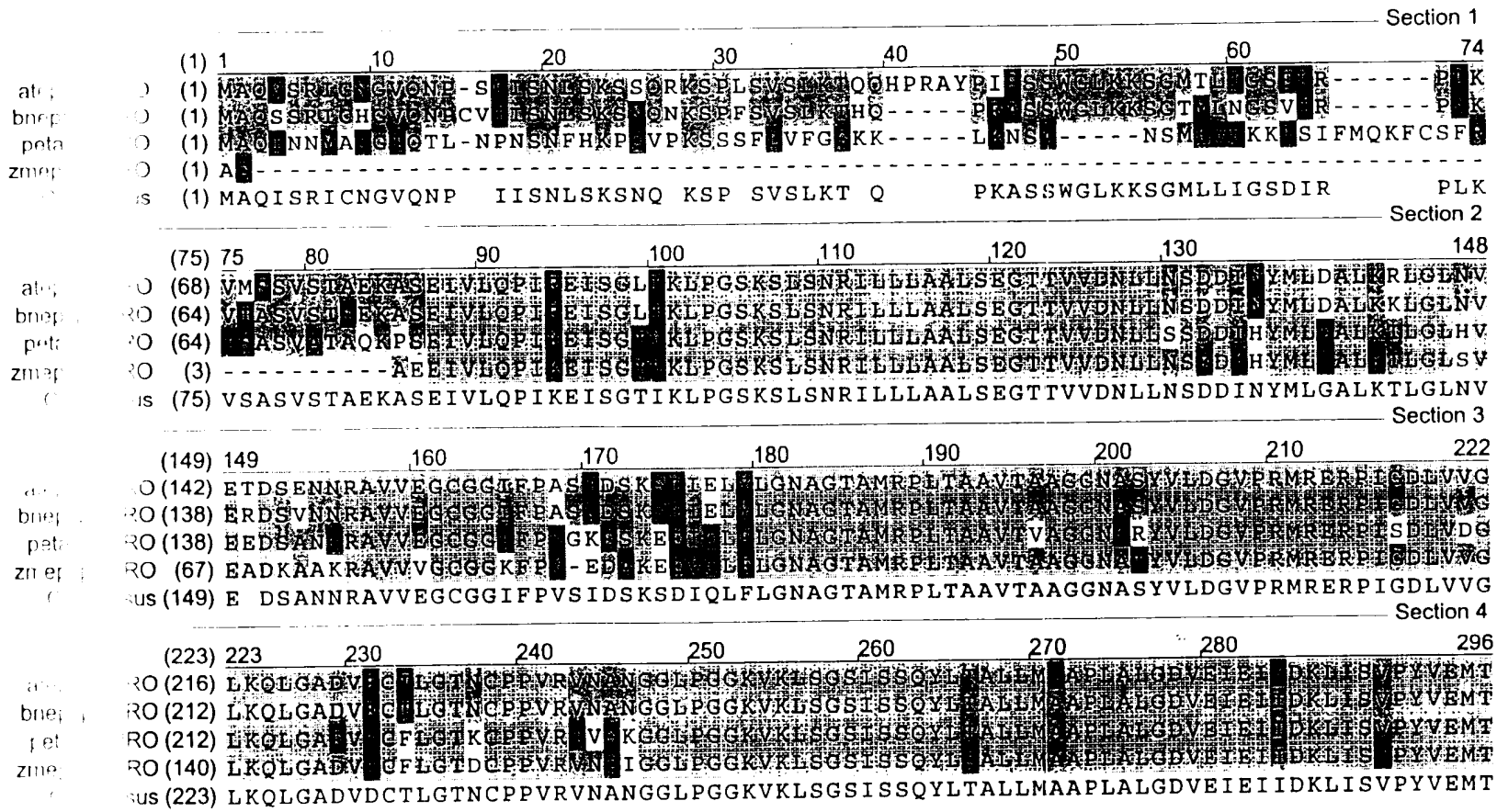
FIG

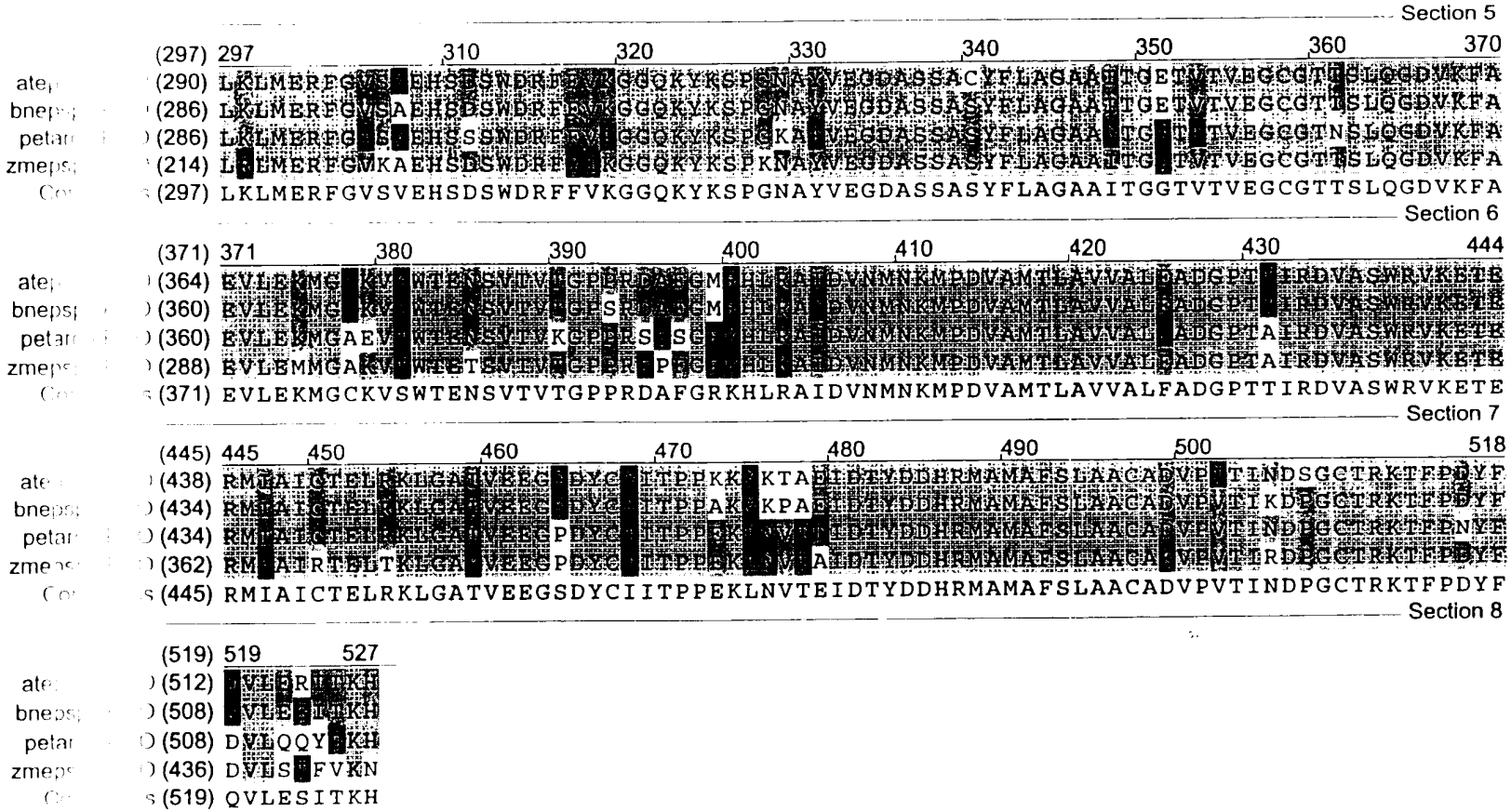


FIG



Fig





Oligo Name	Oligo Sequence (5'→3')
ATEPS-A_{177}	CGTTTCCACCTGCAGCAGTGACCGCAGCGGTAAGTGGACGCATTGCTGT**TGC**TGCATTACCGAG
ATEPS-AI	CGTTTCCACCTGCAGCAGTGACCGCAGCGGTAAGTGGACGCATTGC**TATTGC**TGCATTACCGAG
ATEPS-IS	CGTTTCCACCTGCAGCAGTGACCGCAGCGGTAAG**TGA**ACGCATTGC**TAT**TCCTGCATTACCGAG
ATEPS-AS	CGTTTCCACCTGCAGCAGTGACCGCAGCGGTAAG**TGA**ACGCATTGCTGT**TGC**TGCATTACCGAG
ATEPS-AIS	CGTTTCCACCTGCAGCAGTGACCGCAGCGGTAAG**TGA**ACGCATTGC**TATTGC**TGCATTACCGAG
ATEPS-I_{177}	CGTTTCCACCTGCAGCAGTGACCGCAGCGGTAAGTGGACGCATTGCTGT**TAT**TGCATTACCGAG
ATEPS-VS	CGTTTCCACCTGCAGCAGTGACCGCAGCGGTAAG**TGA**ACGCATTGC**TAC**TCCTGCATTACCGAG
ATEPS-LS	CGTTTCCACCTGCAGCAGTGACCGCAGCGGTAAG**TGA**ACGCATTGC**TAA**TCCTGCATTACCGAG
ATEPS-AV	CGTTTCCACCTGCAGCAGTGACCGCAGCGGTAAGTGGACGCATTGC**TACTGC**TGCATTACCGAG
ATEPS-AL	CGTTTCCACCTGCAGCAGTGACCGCAGCGGTAAGTGGACGCATTGC**TAATGC**TGCATTACCGAG

FIG. 5

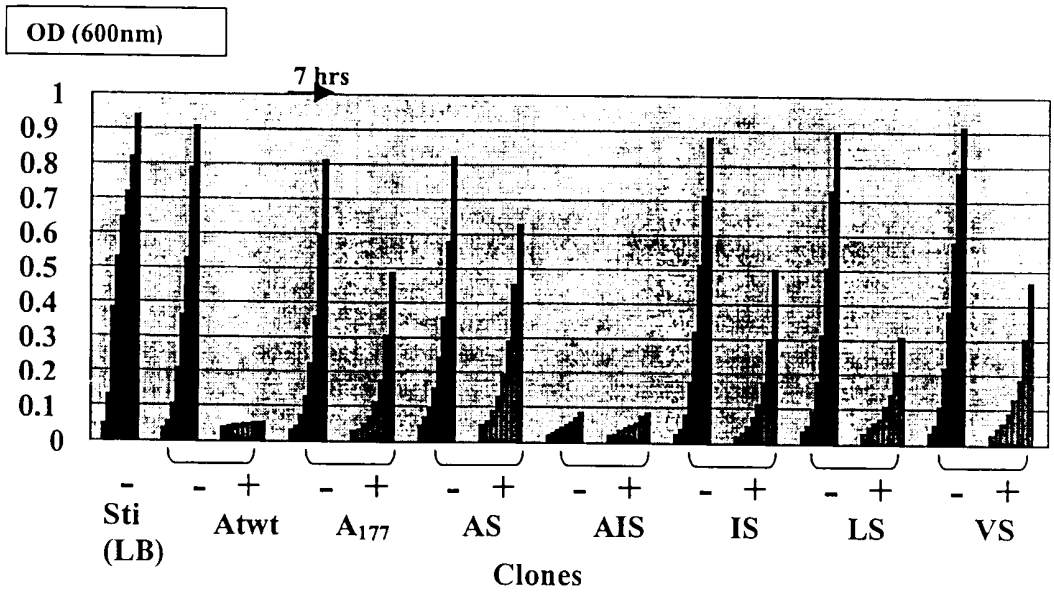


FIG. 6

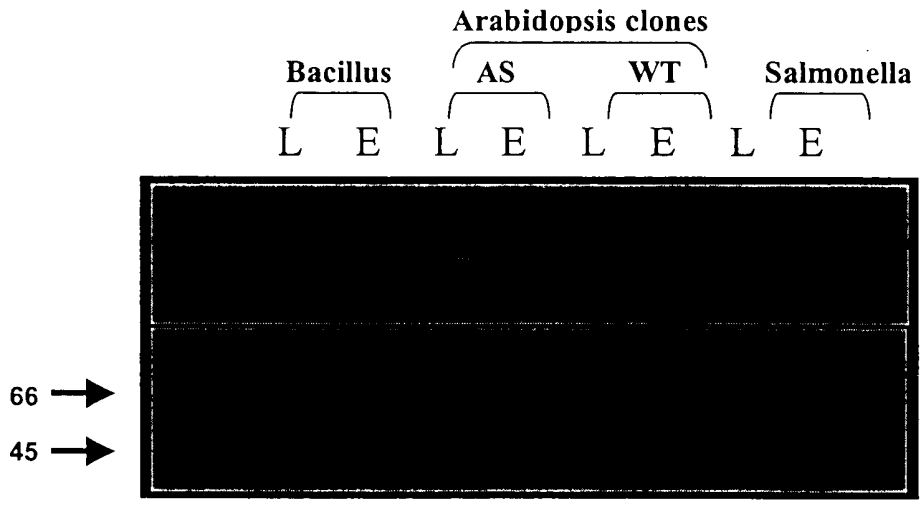


FIG. 7